

## **SPEECHES:**

"Meeting the Future Challenges of Health Care Reform," speech before the Institute for International Research Conference on Patient Information, Education and Compliance Programs, 1993.

"Setting The Economic Scene for the Next Seven Years: Health Care," speech before the Annual Meeting of the Actuarial Society of Greater New York, 1993.

"Parallel Trade in Pharmaceuticals: The Impact on Welfare and Innovation," speech before the Southern Economic Association Annual Meeting, 1992.

"The Use of Bidding and Auctioning Models in Competition Analyses," speech before the NERA Twelfth Annual Antitrust & Trade Regulation Seminar, 1991.

"Benefits and Costs of Intellectual Property Protection in Developing Countries," a series of speeches before academic, business and government groups in Argentina and Brazil, 1990; lecture to graduate students in the International Management Program at the University of Maryland, 1990; and presentation at a seminar sponsored by the Minister of Health in Turkey, 1992.

"Competitive Procurement of Generating Capacity: The Importance of Flexibility," speech before the Pacific Northwest Supply and Demand-Side Competitive Bidding Workshop, 1990; presentation at a Federal Energy Regulatory Commission Staff Seminar, 1990.

"Merger Analysis and Policy: Three Examples of Geographic Market Definition Under the DOJ Guidelines," speech before the NERA Tenth Annual Antitrust & Trade Regulation Seminar, 1989.

"Competitive Bidding in Energy Markets: A Policy Analysis," speech before the Eastern Economic Association Annual Meeting, 1989.

"Bibliometric Analysis of U.S. Pharmaceutical Industry Research Performance," speech before the Southern Economic Association Annual Meeting, 1987.

"Diversification by Nonprofit Firms: Competitive Implications," seminar presentations at the University of Hartford, University of Southern California and University of Iowa, 1987.

"Public Policy Issues Affecting the U.S. Pharmaceutical Industry," seminar presentation at Villanova University, 1987.

"Measuring the Returns to the R&D Investment," seminar presentation at the National Institutes of Health STEP Seminar, 1987.

"Protection of Intellectual Property Through Licensing: Efficiency Considerations," speech before the Eastern Economic Association Annual Meeting, 1987.

"The Protection of Intellectual Property Rights: R&D Decisions and Economic Growth," speech before the Western Economic Association Annual Meeting, 1986; and a revised version presented at the National Science Foundation--U.S. Chamber of Commerce Symposium on Protection of Intellectual Property Rights in Science, Technology, and Economic Performance: International Comparisons, 1989.

"Service Mix and Economies of Scope in the Hospital Industry," speech before the Eastern Economic Association Annual Meeting, 1986.

"On the Behavior of For Profit and Nonprofit Hospitals," speech before the Pennsylvania Economic Association Annual Meeting, 1986.

"The Cost Effectiveness of Drugs," speech before the Southeastern Pharmacy Education Conference, 1985.

"Competition as a Complement to Regulation," speech before the Eastern Economic Association Annual Meeting, 1985.

"The Role of Market Power Measures in the Search for an Antitrust Case," speech before the Midwest Economics Association Annual Meeting, 1984.

"Rate of Return Regulation and Vertical Integration Under Uncertainty," speech before the Southern Economic Association Annual Meeting, 1983.

"Advertising and Generic Trademarks," speech before the Eastern Economic Association Annual Meeting, 1980.

"Mathematics for Economists: A Two Course Sequence," speech before the Annual Meeting of the Mathematical Association of America--Maryland, District of Columbia, Virginia Section, 1979.

"The Effects of Imperfect Information on Market Equilibrium: A Survey," speech before the Southwestern Society of Economists Annual Meeting, 1979.

"The Formation of a Trader's Reservation Price," speech before the Annual Pittsburgh Modeling and Simulation Conference, 1978.

"The Effects of Uncertainty on the Firm's Demand for Money," speech before the Southwestern Economics Association Annual Meeting, 1978.

"Numerical Examples of a Market Adjustment Mechanism," speech before the Annual Pittsburgh Modeling and Simulation Conference, 1977.

"A Bidding Process for a Centralized Atomistic Market with Trading Out of Equilibrium," seminar presentations at the University of Missouri and University of Pittsburgh, 1976, and the Federal Trade Commission, 1978; speech before the Southern Economic Association Annual Meeting, 1978; and a revised version presented at a Federal Energy Regulatory Commission Staff Seminar, 1987.

"Uncertainty, Transactions Motive, and the Demand for Money," speech before the Econometric Society Meeting, 1974.

## DEPOSITIONS AND TESTIMONY:

Affidavits on behalf of BellSouth Corporation before the Federal Communications Commission in the matters of the *Petition of Public Utilities Commission, State of Hawaii, for Authority to Extend Its Rate Regulation of Commercial Mobile Radio Services in the State of Hawaii* and *Petition on Behalf of the Louisiana Public Service Commission for Authority to Retain Existing Jurisdiction Over Commercial Mobile Radio Services Offered Within the State of Louisiana*, PR File Nos. 94-SP1 and 94-SP5, filed September 19, 1994.

Affidavit (with H. Ware) in the matter of *U.S. vs. Western Electric Co. and American Telephone and Telegraph Company*, U.S. District Court for the District of Columbia, Civil Action No. 82-0192-HHG, supporting the "Reply of BellSouth Corporation in Support of its Motion for Generic Wireless Relief," filed September 2, 1994.

Affidavit on behalf of BellSouth Corporation before the Federal Communications Commission in the matter of *Amendment of the Commission's Rules to Establish New Personal Communications Services*, GEN Docket No. 90-314, filed August 30, 1994.

Affidavit (with H. Ware) in the matter of *U.S. vs. Western Electric Co. and American Telephone and Telegraph Company*, U.S. District Court for the District of Columbia, Civil Action No. 82-0192-HHG, supporting "BellSouth Corporation's Opposition to AT&T's Motion for a Waiver of Section I(D) of the Decree Insofar as it Bars the Proposed AT&T-McCaw Merger," filed June 28, 1994.

Affidavit, Reply Affidavit and Affidavit (with H. Ware) on behalf of BellSouth Corporation before the Federal Communications Commission in the matter of *AT&T-McCaw Merger, In re Applications of American Telephone and Telegraph Company and Craig O. McCaw For Consent to the Transfer of Control of McCaw Cellular Communications, Inc. and its Subsidiaries*, File No. ENF-93-44, filed November 1, 1993, January 18, 1994 and June 20, 1994, respectively.

Testimony on behalf of Alpha 1 Biomedicals, Inc. in the matter of *Alpha 1 Biomedicals, Inc. vs. SciClone Pharmaceuticals, Inc.*, American Arbitration Association, No. 74 E 113 00902 93, February 11-12, 1994.

Deposition on behalf of Alpha 1 Biomedicals, Inc. in the matter of *Alpha 1 Biomedicals, Inc. vs. SciClone Pharmaceuticals, Inc.*, American Arbitration Association, No. 74 E 113 00902 93, January 13, 1994.

Declaration on behalf of Alpha 1 Biomedicals, Inc. in the matter of *SciClone Pharmaceuticals, Inc. vs. Alpha 1 Biomedicals, Inc.*, U.S. District Court for the Northern District of California, Civil Action No. C93-3464-CAL, October 1, 1993.

Testimony on behalf of American Cyanamid Company in the matter of *Mylan Pharmaceuticals, Inc. vs. American Cyanamid Company vs. Roy McKnight*, U.S. District Court for the Northern District of West Virginia, Civil Action No. 90-0121-C(S), September 21-23, 1993.

Deposition on behalf of American Cyanamid Company in the matter of *Mylan Pharmaceuticals, Inc. vs. American Cyanamid Company vs. Roy McKnight*, U.S. District Court for the Northern District of West Virginia, Civil Action No. 90-0121-C(S), August 6-7, 1993.

Affidavit on behalf of American Cyanamid Company in the matter of *Mylan Pharmaceuticals, Inc. vs. American Cyanamid Company vs. Roy McKnight*, U.S. District Court for the Northern District of West Virginia, Civil Action No. 90-0121-C(S), January 20, 1993.

Testimony on behalf of Dornier Medical Systems, Inc. in the matter of *Technical Resource Services, Inc. vs. Dornier Medical Systems, Inc.*, U.S. District Court for the Middle District of Florida Orlando Division, Civil Action No. 91-762-CIV-ORL-19, June 22-23, 1993.

Deposition on behalf of Dornier Medical Systems, Inc. in the matter of *Technical Resource Services, Inc. vs. Dornier Medical Systems, Inc.*, U.S. District Court for the Middle District of Florida Orlando Division, Civil Action No. 91-762-CIV-ORL-19, January 26, 1993.

Declaration and Reply Declaration on behalf of Xoma Corporation in the matter of *Xoma Corporation vs. Centocor, Inc.*, U.S. District Court for the Northern District of California, Civil Action No. C-90-1129-RHS, January 8, 1992 and March 7, 1992, respectively.

Deposition on behalf of Xoma Corporation in the matter of *Xoma Corporation vs. Centocor, Inc.*, U.S. District Court for the Northern District of California, Civil Action No. C-90-1129-RHS; and "Certain Monoclonal Antibodies Used for Therapeutically Treating Humans Having Gram Negative Bacterial Infections," U.S. International Trade Commission, Investigation No. 337-TA-323, June 27, 1991.

Affidavit (with C. Jackson) in the matter of *U.S. vs. Western Electric Co. and American Telephone and Telegraph Company*, U.S. District Court for the District of Columbia, Civil Action No. 82-0192-HHG, supporting the "Request by BellSouth Corporation for a Waiver of the Modification of Final Judgment to Allow BellSouth Corporation to Provide Integrated MultiLATA Cellular Service," filed May 9, 1991.

Testimony (written) on behalf of Eighteen Vermont Utilities before the Federal Energy Regulatory Commission in the matter of *Northeast Utilities Service Company (Re: Public Service Company of New Hampshire)*, Docket Nos. EC90-10-000, ER90-143-000, ER90-144-000, ER90-145-000 and EL90-9-000, May 25, 1990.

Deposition on behalf of Ortho Pharmaceutical Corp. in the matter of *Ortho Pharmaceutical Corp. vs. Amgen, Inc.*, Endispute Arbitration, August 22 and September 15, 1989.

Deposition on behalf of McGraw Edison Company in the matter of *Augustus Oliviere vs. McGraw Edison Company, et al*, U.S. District Court for the District of Columbia, Civil Action No. 87-600-JHP, November 11, 1987.

## CONSULTING REPORTS:

"Answers to the DOJ Questions on the Competitive Effects of the PMA Undertaking," prepared for the Pharmaceutical Manufacturers Association, April 1993.

"Profile of the Health Care System in Canada" and "Reform of the Health Care System in Canada," (with C. Salisbury), prepared as part of the volume *The Health Care System in Canada* for the project Financing Health Care with Particular Reference to Medicines, April 1993.

"The Consequences of Pharmaceutical Product Patenting: A Critique," prepared for the Pharmaceutical Manufacturers Association, December 1992.

"Review of the GAO Report: Prescription Drugs: Companies Typically Charge More in the United States Than in Canada," prepared for a research-based pharmaceutical firm, November 1992.

"Parallel Trade in Pharmaceuticals: The Impact on Welfare and Innovation," (with R. Rapp), prepared for the Pharmaceutical Manufacturers Association, July 1992 (*NERA Working Paper No. 16*).

"The Commission Should Close Its Investigation of Lamar's Acquisition of Metro," (with J. McDavid and C. Lamar), prepared for a client involved in a FTC investigation, May 1992.

"Economics of the Research-Based Pharmaceutical Industry," (with C. Salisbury), prepared for the Pharmaceutical Manufacturers Association, February 1992.

"An Analysis of a Proposed Acquisition by R.P. Scherer International Corporation," prepared to help a client assess the competitive impact of a proposed acquisition in the U.S. and certain foreign countries, September 1991.

"Public Disclosure of Bids and Bidders," (with M. Bidwell and H. Nalbantian), prepared for New York Telephone Company, June 1991.

"Benefits and Costs of Intellectual Property Protection in Developing Countries," (with R. Rapp), prepared for a group of pharmaceutical firms interested in including intellectual property rights in the GATT, June 1990 (*NERA Working Paper No. 3*).

"Hospital Rate Regulation in Maryland: The Effect on Howard County General Hospital," (with C. Groszer and L. Nordgulen), prepared to help a client identify methodological and statistical problems with the approach to hospital rate setting in Maryland, April 1989.

"Update on Utility Competitive Bidding Programs," (with L. Nordgulen), prepared for the Energy Research Group, February 1989.

"Bidding Theory and the Baseball Player Market," prepared for a client concerned about compensation issues in professional sports, November 1988.

"The Bulk Power Coordination Services Market in Northern California: A Competitiveness Assessment," (with M. Rosenzweig and L. Nordgulen), prepared for a U.S. investor-owned utility, July 1988.

"An Analysis of the Westinghouse/ASEA-Brown Boveri Joint Ventures," prepared for a client concerned about combinations of firms in electric equipment markets, July 1988.

"Legal and Economic Theories of Contracts and Contract Discharge," prepared as background in *Wendy's vs. Pepsico* litigation, December 1987.

"A Guide to the Economics of Bidding and Auctioning Processes," prepared for the Energy Research Group, November 1987.

"Analysis of Market Power Using SAC," prepared as background in *ETSI Pipeline Project vs. Burlington Northern, Inc. et al*, U.S. District Court for the Eastern District of Texas, Civil Action No. B-84-979, October 1987.

October 1994

## **ATTACHMENT B**

# **COMPARISON OF SHARES OF PCS REVENUES: SIMULTANEOUS ENTRY VS. FIRST MOVER**

PCS License	Simultaneous Entry		First Mover		Change in Share of PCS Revenues (Percent) (2) - (4) (5)
	PCS Spectrum (MHz) (1)	Share of Total Spectrum [1] (Percent) (1)+120 (2)	PCS Firm Entry Order (3)	Share of PCS Revenues with 6 Licensees [2] (Percent) (4)	
1	30	25.0 %	Pioneer	41.4 %	(16.4) %
2	30	25.0	Early Follower	24.3	0.7
3	30	25.0	Late	17.1	7.9
4	10	8.3	Late	5.7	2.6
5	10	8.3	Late	5.7	2.6
6	10	8.3	Late	5.7	2.6
Total	120	100.0 %		99.9 %	

( ) negative

[1] Assumes that share of PCS revenues is proportionate with share of licensed spectrum.

[2] Based on studies of pioneering strategy that show long-term market share averages (pioneer entrant, 29%; early follower, 17%; late entrant, 12%). The shares have been normalized to reflect a situation with six entrants (the shares 29%, 17%, 12%, 4%, 4% and 4% were divided by the total, 70%, and multiplied by 100%).

Source: Col. (1): "Fifth Report and Order," Before the Federal Communications Commission, In the matter of Implementation of Section 309(j) of the Communications Act - Competitive Bidding, PP Docket No. 93-253, released July 15, 1994, pp. 4 - 5.

Cols. (2) and (4): Derived from D. Haines, R. Chandran and A. Parkhe, "Winning By Being the First to Market . . . Or Second?," The Journal of Consumer Marketing, Vol. 6, No. 1, Winter 1989, p. 64.



# ESTIMATED PCS REVENUES FOR THE FIRST TEN YEARS BASED ON CELLULAR EXPERIENCE

Expressed In 1994 Dollars

Year On Market	Cellular Service					Estimated PCS Subscribers [2]	PCS Revenue Per Subscriber [3] (\$Thousands) (5) × 0.80 (7)	Total Estimated PCS Revenues In 1994 Dollars [4] (\$Thousands) (6) × (7) (8)
	Total Revenue (\$Thousands) (1)	Inflation Adjustment Factor [1] (Percent) (2)	Total Revenues in 1994 Dollars (\$Thousands) ((1)×(2))+(1) (3)	Total Subscribers (4)	Revenue Per Subscriber (\$Thousands) (3)+(4) (5)			
0	\$ 178,085	12.9 %	\$ 201,058	91,600	\$ 2.195	25,000	\$ 1.756	\$ 44,000
1	306,197	7.9	330,387	340,213	0.971	225,000	0.777	175,000
2	462,467	5.0	485,590	681,825	0.712	1,425,000	0.570	812,000
3	672,005	6.4	715,013	1,230,855	0.581	3,925,000	0.465	1,825,000
4	1,073,473	5.0	1,127,147	2,069,441	0.545	7,425,000	0.436	3,237,000
5	1,934,132	5.3	2,036,641	3,508,944	0.580	11,425,000	0.464	5,301,000
6	2,422,458	5.8	2,562,961	5,283,055	0.485	15,925,000	0.388	6,179,000
7	3,055,017	2.2	3,122,227	7,557,148	0.413	20,675,000	0.330	6,823,000
8	4,189,441	2.5	4,294,177	11,032,753	0.389	25,425,000	0.311	7,907,000
9	6,072,906	0.7	6,115,416	16,009,461	0.382	31,273,000 [5]	0.306	9,570,000
Total	\$ 20,366,181		\$ 20,990,617					\$ 41,873,000

Note: Annual cellular service revenues are from the years 1984 through 1993.

[1] Based on the percent change in the unadjusted Consumer Price Index for telephone services from years 1984 to 1993 where 1994 = 100.

[2] DLJ estimates are for years 1995 to 2003.

[3] Based on the United Kingdom experience, analysts estimate PCS prices in the United States must be 20% to 25% less than the cost of cellular service to be competitive. Lower operating expenses in PCS allow for such discounts.

[4] Rounded to the nearest millionth.

[5] Derived assuming growth rate remains constant at the previous year's level (23%). Rounded to the nearest thousandth.

Source: Cols. (1) and (4): CTIA End-of-Year Data Survey, December 1984 - December 1993.

Col. (2): Derived from Consumer Price Index Detailed Report, "Table 25. Historical Consumer Price Index for All Urban Consumers: U.S. city average by commodity and service group and detailed expenditure categories," USDOL/BLS, May 1994, p.75.

Cols. (6) and (7): Derived from D. Leibowitz, E. Buck, T. Weller and J. Whittier, The Wireless Communications Industry, Donaldson, Lufkin & Jenrette, Summer 1994, pp. 13 (Table 4) and 18.

# **INCREASE IN VALUE OF PCS SPECTRUM WITH RESALE**

PCS Year on Market	Year	Total Estimated PCS Revenues [1] (\$Thousands)	With Resale		Without Resale		Lost Revenue (\$Thousands) (4) - (6)	Profit Margin [4] (Percent)	Lost Profit (\$Thousands) (7) x (8)	Discount Factor [5]	Value Attributable to Resale (\$Thousands) (9) x (10)
			Share of PCS Revenue [2] (Percent)	Revenue to LECs (\$Thousands) (2) x (3)	Share of PCS Revenue [3] (Percent)	Revenue to LECs (\$Thousands) (2) x (5)					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
0	1995	\$ 44,000	8.3 %	\$ 3,652	5.7 %	\$ 2,508	\$ 1,144	15.5 % [6]	\$ 177	1.0000	\$ 177
1	1996	175,000	8.3	14,525	5.7	9,975	4,550	17.4 [6]	792	0.8889	704
2	1997	812,000	8.3	67,396	5.7	46,284	21,112	19.5 [6]	4,117	0.7901	3,253
3	1998	1,825,000	8.3	151,475	5.7	104,025	47,450	21.9 [6]	10,392	0.7023	7,298
4	1999	3,237,000	8.3	268,671	5.7	184,509	84,162	24.6 [6]	20,704	0.6243	12,926
5	2000	5,301,000	8.3	439,983	5.7	302,157	137,826	27.6 [6]	38,040	0.5549	21,108
6	2001	6,179,000	8.3	512,857	5.7	352,203	160,654	31.0	49,803	0.4933	24,568
7	2002	6,823,000	8.3	566,309	5.7	388,911	177,398	34.8	61,735	0.4385	27,071
8	2003	7,907,000	8.3	656,281	5.7	450,699	205,582	36.8	75,654	0.3897	29,482
9	2004	9,570,000	8.3	794,310	5.7	545,490	248,820	39.1	97,289	0.3464	33,701
Total		\$ 41,873,000		\$ 3,475,459		\$ 2,386,761	\$ 1,088,698		\$ 358,703		\$ 160,288

[1] Revenue per subscriber trends in the cellular industry applied to PCS revenue projections. Expressed in 1994 dollars.

[2] Based on simultaneous entry; for a licensee holding 10MHz of the 120MHz available, the proportional share of revenue is 8.3%.

[3] Based on first mover theory of pioneer, early and late entrant shares; there is a 2.6% share penalty for late entrants with 10MHz of spectrum (8.3% - 2.6% = 5.7%).

[4] Based on the income margin before depreciation on cellular services as projected by DLJ for a typical cellular company unless otherwise noted (projections for years 1990 through 1993 equal years six through nine on the PCS market respectively). Income takes into account costs of operation, administration and marketing for cellular services.

[5] Discount rate of 12.5%.

[6] Assumes a constant growth rate of profit margin at 12.3%, based on the growth in income margin before depreciation for 1990 and 1991 as projected by DLJ.

Source: Col. (2): Derived from CTIA End-of-Year Data Survey, December 1984 - December 1993 and D. Leibowitz, E. Buck, T. Weller and J. Whittier, The Wireless Communications Industry, Donaldson, Lufkin & Jenrette, Summer 1994, p. 18.

Col. (5): Derived from D. Haines, R. Chandran and A. Parkhe, "Winning By Being First To Market...Or Second?," The Journal of Consumer Marketing, Vol. 6, No. 1, Winter 1989, p. 64.

Col. (8): D. Leibowitz, E. Buck, T. Weller and J. Whittier, The Wireless Communications Industry, Donaldson, Lufkin & Jenrette, Summer 1994, p. 14 and D. Leibowitz, E. Buck and J. Whittier, The Cellular

# **ATTACHMENT C**

**DIFFERENCE BETWEEN TWO HIGHEST BIDS IN  
THE NARROWBAND PCS AUCTION**  
**Determined Using Winning Bid and Highest Bid By Non-Winner**

Market Number	Winning Bid [1]		Highest Bid Excluding Winners [2]		Revenue Loss ------(Dollars)----- (4) - (2) (5)	Percent Difference (Percent)  (5) + (2)  (6)
	Bidder ID	Bid Amount -----(Dollars)----	Bidder ID	Bid Amount -----(Dollars)----		
	(1)	(2)	(3)	(4)		
N-1 [50-50KHz paired]	9065	\$ 80,000,000	5017	\$ 36,335,000	\$ (43,665,000)	54.6 %
N-2 [50-50KHz paired]	9065	80,000,000	5017	37,021,000	(42,979,000)	53.7
N-3 [50-50KHz paired]	5398	80,000,000	5017	36,335,000	(43,665,000)	54.6
N-4 [50-50KHz paired]	5398	80,000,000	1666	56,456,789	(23,543,211)	29.4
N-5 [50-50KHz paired]	7884	80,000,000	5017	60,727,000	(19,273,000)	24.1
N-6 [50-12.5KHz paired]	7561	47,001,001	2055	40,001,000	(7,000,001)	14.9
N-7 [50-12.5KHz paired]	1006	47,505,673	1666	44,000,012	(3,505,661)	7.4
N-8 [50-12.5KHz paired]	7884	47,500,000	5403	45,900,577	(1,599,423)	3.4
N-10 [50KHz unpaired]	9065	37,000,000	5403	35,725,577	(1,274,423)	3.4
N-11 [50KHz unpaired]	9683	38,000,000	5403	35,725,586	(2,274,414)	6.0
Total		\$ 617,006,674		\$ 428,227,541	\$ (188,779,133)	

( ) negative

Note: Winner refers to any firm which participated in the Narrowband PCS Auction and was awarded at least one license.

[1] Highest bid for which a license was awarded.

[2] Largest bid by a non-winning bidder.

# **DIFFERENCE BETWEEN TWO HIGHEST BIDS FOR FIVE NARROWBAND PCS LICENSES**

<u>Market Number</u>	<u>Winning Bid</u> ----(Dollars)----	<u>Highest Bid</u> <u>Excluding Winners</u> ----(Dollars)----	<u>Percent</u> <u>Difference</u> (Percent) ((1) - (2))/(1) (3)
	(1)	(2)	
N-6 [50-12.5KHz paired]	\$ 47,001,001	\$ 40,001,000	14.9 %
N-7 [50-12.5KHz paired]	47,505,673	44,000,012	7.4
N-8 [50-12.5KHz paired]	47,500,000	45,900,577	3.4
N-10 [50KHz unpaired]	37,000,000	35,725,577	3.4
N-11 [50KHz unpaired]	38,000,000	35,725,586	6.0
<b>Total</b>	<b>\$ 217,006,674</b>	<b>\$ 201,352,752</b>	<b>7.2 %</b>

Note: Winner refers to any firm which participated in the Narrowband PCS Auction and was awarded at least one license.

Source: Derived from FCC Auction - Narrowband PCS, Nationwide Licenses, Final and Round Results.

CERTIFICATE OF SERVICE

I, Mary Jane Adcock, hereby certify that on this 13th day of October, 1994, copies of the foregoing "Reply Comments of BellSouth" were served via first class United States mail, postage prepaid, on the following parties:

David L. Nace  
Marc E. Greenstein  
Lukas, McGowan, Nace & Gutierrez  
1111 19th Street, N.W., 12th Floor  
Washington, DC 20036  
Counsel for Pacific Telecom Cellular, Inc.

Edward R. Wholl  
William J. Balcerski  
New York Telephone Company  
120 Bloomingdale Road  
White Plains, NY 10605  
Counsel for NYNEX

Thomas J. Casey  
Jay L. Birnbaum  
David Pawlik  
Skadden, Arps, Slate, Meagher & Flom  
1440 New York Avenue, N.W.  
Washington, DC 20005  
Counsel for New Par

Ellen S. LeVine  
Public Utilities Commission of the  
State of California  
505 Van Ness Street  
San Francisco, CA 94102-3298  
Counsel for the People of the State  
of California

Penny Rubin  
Assistant Counsel  
State of New York Department of  
Public Service  
Three Empire State Plaza  
Albany, NY 12223

David E. Weisman  
Alan S. Tilles  
Meyer, Faller, Weisman and Rosenberg  
4400 Jenifer Street, N.W., Ste. 380  
Washington, DC 20015  
Counsel for the National Association of  
Business and Educational Radio, Inc.

Paul Rodgers  
Charles D. Gray  
James Bradford Ramsay  
National Association of Regulatory  
Utility Commissioners  
1102 ICC Building  
P.O. Box 684  
Washington, DC 20044

David Cosson  
National Telephone Cooperative Association  
2626 Pennsylvania Avenue, N.W.  
Washington, DC 20037

Robert S. Foosaner  
Lawrence R. Krevor  
Laura L. Holloway  
Nextel Communications, Inc.  
800 Connecticut Avenue, N.W., Ste. 1001  
Washington, DC 20006

Michael R. Carper  
OneComm Corporation  
4643 Ulster Street, Ste. 500  
Denver, CO 80237

James P. Tuthill  
Betsy Stover Granger  
Pacific Bell  
140 New Montgomery Street, Room 1525  
San Francisco, CA 94105

James L. Wurtz  
1275 Pennsylvania Avenue, N.W.  
Washington, DC 20004  
Counsel for Pacific Bell and Pacific Bell  
Mobile Services

Lisa M. Zaina  
General Counsel  
Organization for the Protection and  
Advancement of Small Telephone Companies  
21 Dupont Circle, N.W. Suite 700  
Washington, DC 20036

Judith St. Ledger-Roty  
Paul G. Madison  
Reed Smith Shaw & McClay  
1200 18th Street, N.W.  
Washington, DC 20036  
Counsel for Paging Network, Inc.

Gerald S. McGowan  
George L. Lyon, Jr.  
John B. Branscome  
Lukas, McGowan, Nace & Gutierrez  
1111 19th Street, N.W., Ste. 1200  
Washington, DC 20036  
Counsel for Palmer Communications  
Incorporated

John Hearne  
Point Communications Company  
100 Wilshire Boulevard, Ste. 1000  
Santa Monica, CA 90401

Bruce S. Asay  
Attorney at Law  
2515 Pioneer Avenue  
Cheyenne, WY 82001  
Counsel for Union Telephone Company

Peter M. Connolly  
Koteen & Naftalin  
1150 Connecticut Avenue, N.W.  
Washington, DC 20036  
Counsel for Telephone and Data Systems,  
Inc.

J. Breck Blalock  
Leventhal, Senter & Lerman  
2000 K Street, N.W., Ste. 600  
Washington, DC 20006-1809  
Counsel for TRW, Inc.

Gary M. Epstein  
James H. Barker  
Lathan & Watkins  
1001 Pennsylvania Avenue, N.W.  
Suite 1300  
Washington, DC 20004-2505  
Counsel for Vanguard Cellular Systems,  
Inc.

Daniel C. Riker  
President  
DCR Communciations, Inc.  
2715 M Street, N.W.  
Washington, DC 20007



Gerald S. McGowan  
Terry J. Romine  
Lukas, McGowan, Nace & Gutierrez  
1111 19th Street, N.W., Suite 1200  
Washington, DC 20036  
Counsel for Dial Page, Inc.

Russell H. Fox  
Gardner, Carton & Douglas  
1301 K Street, N.W., Suite 900  
Washington, DC 20005  
Counsel for E. F. Johnson Company

J. Jeffrey Craven  
D. Cary Mitchell  
Besozzi, Gavin & Craven  
1901 L Street, N.W., Ste. 200  
Washington, DC 20036  
Counsel for First Cellular of  
Maryland, Inc.

David L. Hill  
Audrey P. Rasmussen  
O'Connor & Hannan  
1919 Pennsylvania Avenue, N.W.  
Suite 800  
Washington, DC 20006-3483  
Counsel for Florida Cellular RSA  
Limited Partnership

Michael S. Hirsch  
Geotek Communications, Inc.  
1200 19th Street, N.W., Ste. 607  
Washington, DC 20036

David A. Reams  
President and General Counsel  
Grand Broadcasting Corporation  
P.O. Box 502  
Perrysburg, Ohio 43552

David L. Hill  
Audrey P. Rasmussen  
O'Connor & Hannan  
1919 Pennsylvania Avenue, N.W.  
Suite 800  
Washington, DC 20006  
Counsel for Highland Cellular, Inc.

James F. Rogers  
Latham & Watkins  
1001 Pennsylvania Avenue, N.W.  
Suite 1300  
Washington, DC 20004  
Counsel for Horizon Cellular  
Telephone Company

Peter A. Rohrbach  
Karis A. Hastings  
Hogan & Hartson  
555 13th Street, N.W.  
Washington, DC 20004  
Counsel for LDDS Communications, Inc.

J. Jeffrey Craven  
D. Cary Mitchell  
Besozzi, Gavin & Craven  
1901 L Street, N.W., Ste. 200  
Washington, DC 20036  
Counsel for Lake Huron Cellular Corp.

Joe D. Edge  
Richard J. Arsehault  
Drinker Biddle & Reath  
901 15th Street, N.W., Ste. 900  
Washington, DC 20006  
Counsel for Puerto Rico Telephone Co.

Ernest T. Sanchez  
Baker & McKenzie  
815 Connecticut Avenue, N.W.  
Washington, DC 20006  
Counsel for Rand McNally & Co.

Bob F. McCoy  
Joseph W. Miller  
John C. Gammie  
Suite 3600  
One Williams Center  
Tulsa, Oklahoma 74172  
Counsel for Wiltel, Inc.

Bruce D. Jacobs  
Glenn s. Richards  
Fisher Wayland Cooper Leader  
and Zaragoza  
2001 Pennsylvania Avenue, N.W.  
Ste. 400  
Washington, DC 20006  
Counsel for AMSC Subsidiary Corp.

John T. Scott III  
Crowell & Moring  
1001 Pennsylvania Avenue, N.W.  
Washington, DC 20004  
Counsel for Bell Atlantic Companies

Mark C. Rosenblum  
Robert J. McKee  
Albert M. Lewis  
Clifford K. Williams  
American Telephone & Telegraph Co.  
295 North Maple Avenue  
Basking Ridge, NJ 07920

Michael S. Pabian  
Ameritech  
Room 4H76  
2000 West Ameritech Center Drive  
Hoffman Estates, IL 60196

Martin W. Bercovici  
Keller & Heckman  
1001 G Street, N.W., Ste. 500 West  
Washington, DC 20001  
Counsel for Waterway Communications  
Systems, Inc.

W. Bruce Hanks  
President  
Century Cellunet, Inc.  
100 Century Park Avenue  
Monroe, LA 71203

Lewis J. Paper  
David B. Jeppsen  
Keck, Mahin & Cate  
1201 New York Avenue, N.W.  
Washington, DC 20005  
Counsel for Cellular Service, Inc.  
and ComTech, Inc.

R. Bruce Easter, Jr.  
Davis Wright Tremaine  
2600 Century Square  
Seattle, WA 98101-1688  
Counsel for Claircom Communications  
Group

William D. Baskett III  
Thomas E. Taylor  
David S. Bence  
2500 PNC Center  
Cincinnati, OH 45202-4182  
Counsel for Cincinnati Bell  
Telephone Co.

Thomas Gutierrez  
J. Justin McClure  
Lukas, McGowan, Nace & Gutierrez  
1111 19th Street, N.W.  
Suite 1200  
Washington, DC 20036  
Counsel for Miscellco Communications,  
Inc.

David L. Nace  
Marci E. Greenstein  
Lukas, McGowan, Nace & Gutierrez  
1111 19th Street, N.W., Ste. 1200  
Washington, DC 20036  
Counsel for Small Market Cellular  
Operators

J. Jeffrey Craven  
D. Cary Mitchell  
Besozzi, Gavin & Craven  
1901 L Street, N.W., Ste. 200  
Washington, DC 20036  
Counsel for Sagir, Inc.  
Counsel for Dakota Cellular, Inc.  
Counsel for Americell PA-3 Limited  
Partnership

Theresa Fenelon  
Pittsbury Madison & Sutro  
1667 K Street, N.W., Ste. 1100  
Washington, DC 20006  
Counsel for Saco River Cellular  
Telephone Co.

John A. Malloy  
Vice President  
Columbia PCS, Inc.  
201 North Union Street, Ste. 410  
Alexandria, VA 22314

Michael J. Shortley III  
RochesterTel  
180 So. Clinton Avenue  
Rochester, NY 14646-0995

Peter P. Bassermann  
President  
SNET Mobility, Inc.  
555 Long Wharf Drive  
New Haven, CT 06511

Christine M. Gill  
Tamara Y. Davis  
Keller & Heckman  
1001 G Street, N.W.  
Suite 500 West  
Washington, DC 20001  
Counsel for The Southern Company

Jonathan L. Wiener  
Daniel S. Goldberg  
Goldberg, Godles, Wiener & Wright  
1229 19th Street, N.W.  
Washington, DC 20036  
Counsel for RAM Mobile Data USA  
Limited Partnership

Michael J. Ettner  
Senior Assistant General Counsel  
Personal Property Division  
General Services Administration  
Office of General Counsel  
Washington, DC 20405

Carl W. Northrop  
Bryan, Cave  
Suite 700  
700 13th Street, N.W.  
Washington, DC 20005  
Counsel for Triad Utah, L.P.

Roy L. Morris  
Deputy General Counsel  
Allnet Communications Services, Inc.  
1990 M Street, N.W., Ste. 500  
Washington, DC 20036

Scott K. Morris  
McCaw Cellular Communications, Inc.  
5400 Carillon Point  
Kirkland, WA 98033

Cathleen A. Massey  
Senior Regulatory Counsel  
McCaw Cellular Communications, Inc.  
1150 Connecticut Avenue, N.W.  
Suite 400  
Washington, DC 20036

Larry A. Blosser  
Donald J. Elardo  
MCI Telecommunications Corporation  
1801 Pennsylvania Avenue, N.W.  
Washington, DC 20006

Pamila Riley  
Director Public Policy  
AirTouch Communications  
425 Market Street  
San Francisco, CA 94105

David A. Gross  
Kathleen Q. Abernathy  
AirTouch Communications  
1818 N Street, N.W.  
Washington, DC 20554

Diane Smith  
AllTel Mobile Communications, Inc.  
10825 Financial Parkway, Ste. 401  
Little Rock, Arkansas 72211

Elizabeth R. Sachs  
Lukas, McGowan, Nace & Gutierrez  
1111 19th Street, N.W., Suite 1200  
Washington, DC 20036  
Counsel for American Mobile  
Telecommunications Association, Inc.

Susan H. R. Jones  
Gardner, Carton & Douglas  
1301 K Street, N.W., Ste. 900 East  
Washington, DC 20005  
Counsel for Maritel

Gail L. Polivy  
GTE Service Corporation  
1850 M Street, N.W., Ste. 1200  
Washington, DC 20036

William J. Sill  
Nancy L. Killien  
McFadden, Evans & Sill  
1627 Eye Street, N.W., Ste. 810  
Washington, DC 20006  
Counsel for GTE Service Corp.

Carl Tacker  
Southwestern Bell Mobile Systems  
17330 Preston Road  
Ste. 100A  
Dallas, TX 75252

William B. Wilhelm, Jr.  
Cohn & Marks  
1333 New Hampshire Avenue, N.W.  
Suite 600  
Washington, DC 20036

Leonard J. Kennedy  
Laura H. Phillips  
Richard S. Denning  
Dow, Lohnes & Albertson  
1255 23rd Street, N.W.  
Washington, DC 20037  
Counsel for Comcast Corporation

Anne V. Phillips  
American Personal Communications  
1025 Connecticut Avenue, N.W.  
Washington, DC 20036

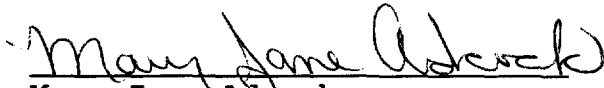
Caressa D. Bennet  
Regulatory Counsel  
Rural Cellular Association  
2120 L Street, N.W., Ste. 520  
Washington, DC 20037

Mark J. Golden  
Personal Communications Industry  
Association  
1019 19th Street, N.W.  
Washington, DC 20036

Michael F. Altschul  
General Counsel  
Cellular Telecommunications Industry  
Association  
1250 Connecticut Avenue, N.W., S.200  
Washington, DC 20036

Christopher Johnson  
Western Wireless Corporation  
330 120th Avenue, N.E.  
Suite 200  
Bellevue, WA 98005

Werner K. Hartenberger  
Laura H. Phillips  
Steven F. Morris  
Dow, Lohnes & Albertson  
1255 23rd Street, N.W., S.500  
Washington, DC 20037  
Counsel for Cox Enterprises, Inc.

  
Mary Jane Adcock